Your Partner for Humidity and Flow Sensor Solutions

Humidity & Temperature Sensors

SENSIRION
THE SENSOR COMPANY

Market Leader through Innovation

Sensirion's humidity and temperature sensors have become established as the market standard – mainly due to their high performance, functionality and miniaturized form factor. These unique features are based on Sensirion's innovative CMOSens® Technology, which integrates a humidity sensor, a temperature sensor, signal processing and calibration memory on a single chip.

For more information please visit: www.sensirion.com/humidity

HUMIDITY AND TEMPERATURE AFFECT ALL OF US

Sensirion's humidity and temperature sensors provide an important contribution to many different applications and help make our customers more successful and their devices more intelligent. Accurate, reliable measurements improve energy efficient cars, building control, appliances, medical devices, and a multitude of other little helpers in our daily life.

TESTED AND PROVEN WORLDWIDE

Our in-house sensor calibration and testing infrastructure allows effective procedures compliant with established quality standards. Each sensor is individually tested for quality and accuracy. The high reliability of the sensors is proven by millions of sensors in the field and is further underlined by successful qualification based on the AEC-Q100 automotive standard. A proven and tested quality management system ensures low PPM values.

RELIABLY PROTECTED

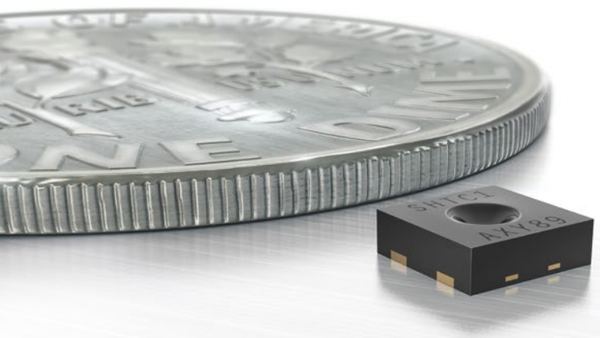
Sophisticated packaging protects the sensors against aging and ambient conditions, such as condensation and harsh environments, to ensure excellent long-term stability. Our optional filter cap is an easily fitted solution to protect Sensirion's humidity and temperature sensors against water, dust, soot and other pollutants, even in the most demanding environments.

EASY EVALUATION

Sensirion's evaluation kits allow designers to evaluate and test the sensors without any hardware or software design effort. These evaluation kits support various resolutions, display values in °C or °F, and allow the user to select absolute or relative timing. They can be used to record and display humidity and temperature values or calculated values of dew point and power consumption. They also include data-logging capability, and data can be exported to Excel.

Consumer Electronics

Appliance



Building Technology

Automotive

Medical

What we offer

TECHNOLOGY & INNOVATION

Innovative CMOSens® Technology enables the sensor element to be combined with the analog and digital signal processing circuitry on a tiny CMOS silicon chip. This provides the basis for extremely high measurement accuracy, long term stability and miniaturization.

QUALITY & RELIABILITY

CMOSens® Technology is based on proven and reliable standard processes used in semiconductor fabrication, which contribute to the high reliability and reproducibility of Sensirion sensor solutions. Furthermore, Sensirion is strongly committed to continuous improvement.

SUPPORT

Whether you are planning, implementing or updating sensor technology, we offer a wide range of services designed for your needs. With our application know-how we assist you in all stages of development.

COST EFFECTIVENESS

As a standard semiconductor fabrication process, CMOS is optimized for reliable mass production. Our sensors are based on this cost-optimized standard process, which gives our customers the best possible value for money.

SENSIRION – THE SENSOR COMPANY

Sensirion is the leading manufacturer of high-quality sensors and sensor solutions for the measurement and control of humidity, and gas and liquid flows. Founded in 1998 as a spin-off from the Swiss Federal Institute of Technology (ETH), the company is based near Zurich, Switzerland, and has offices in North America, South Korea, Japan, China and Taiwan. The head office in Switzerland is responsible for research, development and production.

Millions of Sensirion's sensor components and solutions are used all over the world. Customers in various industries, including demanding mass markets such as the automotive and medical industries, rely on our products. Sensirion's success is based on the innovative CMOSens® Technology, which combines sensor and analysis electronics on a single semiconductor chip. This enables the low-cost production of a large number of high-quality units, making Sensirion a preferred supplier of microsensors and sensor solutions. With locations around the world and a seamless distribution network, we can provide the highest level of customer support at every stage of a project. The many awards we have won demonstrate that we are prepared to go the extra mile for our customers. We received the Ernst & Young Entrepreneur of the Year® 2010 award, which is presented to companies that have made a contribution to the competitiveness of the Swiss economy by means of personal commitment and a willingness to take risks.

Selection of Sensirion Humidity & Temperature Sensors

SHTC1 SERIES

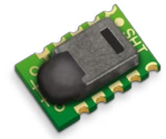
- High production volume
- Low power consumption
- Size: 2 x 2 x 0.8 mm

Humidity sensor	SHTC1
Typical accuracy (% RH)	± 3.0
Maximum accuracy tolerance (% RH)	± 4.5
Hysteresis max. (% RH)	± 1.0
Long term drift (% RH/yr)	< 0.5
Operating range (% RH)	0 – 100
Resolution (bits)	14
Response time τ 63 % [1] (s)	8
Temperature sensor	
Typical accuracy (°C)	± 0.3
Maximum accuracy tolerance (°C)	± 0.4
Long term drift (°C/yr)	< 0.04
Operating range (°C)	-30 – 100
Response time τ 63 % [1] (s)	5 – 30
Electrical	
Sensor interface	I²C
Supply voltage (V)	1.8V
Avg. power consumption [2] (µW)	≈ 1.6

SHT2X SERIES

- Designed for mass production
- Low power consumption
- Size: 3 x 3 x 1.1 mm

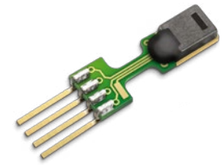
SHT20	SHT21	SHT25
± 3.0	± 2.0	± 1.8
± 4.5	± 3.0	± 2.0
± 1.0	± 1.0	± 1.0
< 0.5	< 0.5	< 0.5
0 – 100	0 – 100	0 – 100
8, 10, 11, 12	8, 10, 11, 12	8, 10, 11, 12
8	8	8
± 0.3	± 0.3	± 0.2
± 0.4	± 0.4	± 0.35
< 0.04	< 0.04	< 0.04
-40 – 125	-40 – 125	-40 – 125
5 – 30	5 – 30	5 – 30
I²C, S-bus, PWM,SDM	I²C, S-bus, PWM, SDM	I²C, S-bus
2.1 – 3.6	2.1 – 3.6	2.1 – 3.6
≈ 3.2	≈ 3.2	≈ 3.2



SHT1X SERIES

- Wide supply voltage range
- Suitable for mass production
- Size: 7.5 x 4.9 x 2.6 mm

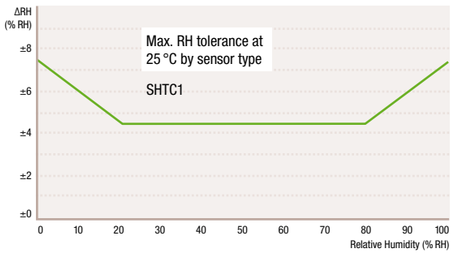
SHT10	SHT11	SHT15
± 4.5	± 3.0	± 2.0
± 4.5	± 3.0	± 2.0
± 1.0	± 1.0	± 1.0
< 0.5	< 0.5	< 0.5
0 – 100	0 – 100	0 – 100
8, 12	8, 12	8, 12
8	8	8
± 0.5	± 0.4	± 0.3
< 0.04	< 0.04	< 0.04
-40 – 123.8	-40 – 123.8	-40 – 123.8
5 – 30	5 – 30	5 – 30
S-bus	S-bus	S-bus
2.4 – 5.5	2.4 – 5.5	2.4 – 5.5
≈ 34	≈ 34	≈ 34

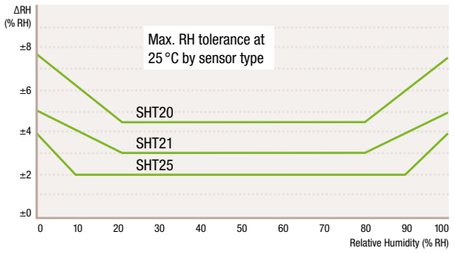


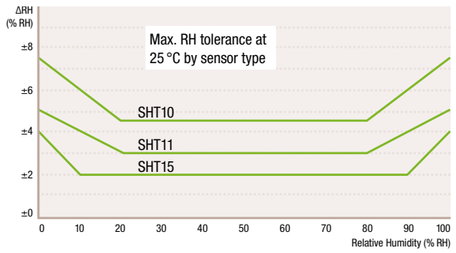
SHT7X SERIES

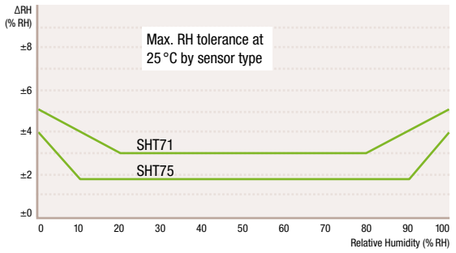
- Suitable for manual assembly
- Wide supply voltage range
- Size: 19.5 x 5.8 x 3.1 mm

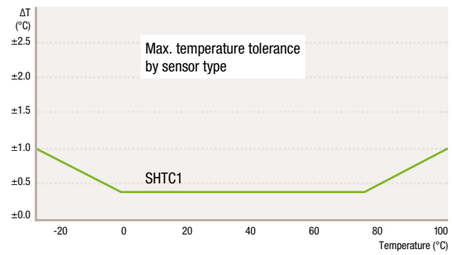
SHT71	SHT75
± 3.0	± 1.8
± 3.0	± 1.8
± 1.0	± 1.0
< 0.5	< 0.5
0 – 100	0 – 100
8, 12	8, 12
8	8
± 0.4	± 0.3
< 0.04	< 0.04
-40 – 123.8	-40 – 123.8
5 – 30	5 – 30
S-bus	S-bus
2.4 – 5.5	2.4 – 5.5
≈ 34	≈ 34

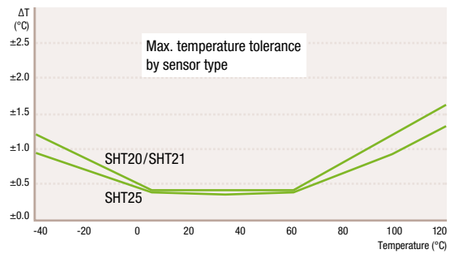


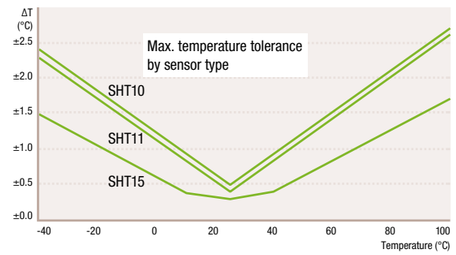


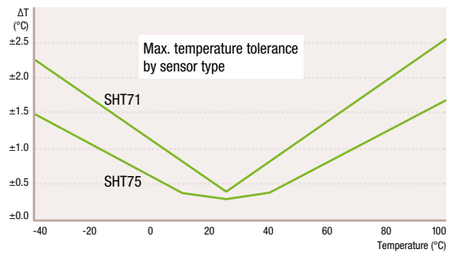










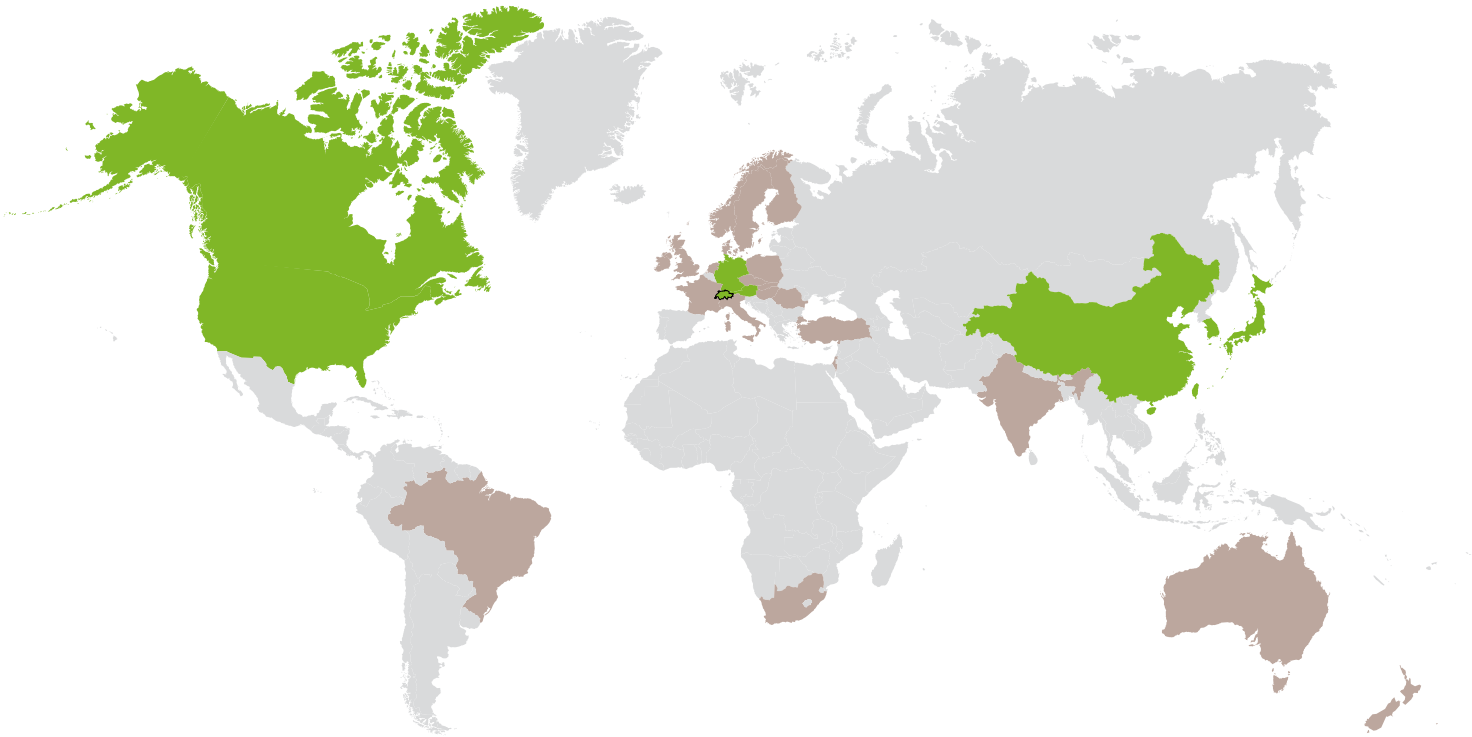


Please note that the stated values are only indicatory. For detailed information, consult current datasheets for individual sensor types.

[1] *Temperature response times very much depend on the thermal conductivity of the sensor substrate material.*

[2] *Average power consumption values are for one 8 bit measurement per second at 3V supply voltage and temperature < 60 °C. SHTC1 low power mode measurement at 1.8V supply voltage.*

Sensing. Anytime. Anywhere.



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